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REPORT ON SOCIOECONOMIC IMPACTS OF AN ALASKAN NATURAL GAS TRANSPORATION SYSTEM

Prepared by

Office of Coastal Zone Management
U.S. DEPARTMENT OF COMMERCE

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PREFACE

This report is one of several written by agencies of the Federal Government on various issues pertinent to the President's decision on the alternative Alaska natural gas systems. Section 6(a) of the Alaska Natural Gas Transportation Act of 1976 specifies that the Federal agencies must submit by July 1, 1977 any information useful to the President supplementing that contained in the Federal Power Commission Recommendation of May 2, 1977.

This report contains comments on the socioeconomic impact analyses submitted to the Federal Power Commission during its proceedings, and on the Commission Recommendation itself. The purpose of the analyses in the report is to present and discuss some important factors which appear to be significant enough for consideration in the President's overall decision. Given this specific purpose and the massive amount of evidence which has accumulated in the past three years, this report is not intended to be a comprehensive review or an analysis independent of previous work. Detailed questions must be referred to documents such as the Socioeconomic Briefs filed with the FPC, the Interior Department Final Environmental Impact Statement, the Berger Inquiry Report, Judge Litt's Decision, or the Commission Recommendation.

This report was prepared by Ernest S. Ting, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration at the request of Dr. Edward Miller, Acting Deputy Assistant Secretary for Energy and Strategic Resource Policy.

THE COMMISSION RECOMMENDATION - MAY 2, 1977

The Federal Power Commission's overall conclusion was that the socio-economic impacts of the pipeline proposals "offer little guidance for the final choice among the competing applicants."*

In the Commission's view the socioeconomic benefits from any of the three proposals are "overwhelming" and are largely independent of the exact route. The primary benefits which were identified by Judge Litt and quoted by the Commission are the large sums received by the State of Alaska in the form of royalty gas payments and severence taxes. Also among the benefits cited were revenues from property taxes, and personal and corporate income taxes. The Commission notes that these benefits will be accompanied by increased public expenditures, but claims that such expenditures will stimulate economic activity and improve the "general economic well-being of Alaska."** Nevertheless, the Commission warns that "substantial social and economic dislocations" should be expected in the State of Alaska during the construction phase.***

The Commission concentrates its concern in Alaska, noting that the primary socioeconomic impacts "which are definable," especially for the United States, are in that relatively undeveloped state. For the lower 48 states and Canada increases in public revenues are cited as the principal impacts; other effects are considered minor except for the influence on the traditional lifestyle of native communities in the Yukon and Northwest Territories.

In considering the preferred route among the three systems, the Commission detailed several concerns in Alaska: population growth, employment and unemployment, cost of public services and facilities, effects on income and spending, demand for housing, public safety and recreation, and intra-state use of royalty gas. The report summary asserts that the El Paso system would create the largest impacts with "more jobs, more personal income, more property subject to tax, and more indirect economic activity...but

*Federal Power Commission, Recommendation to the President, May 1, 1977, p. VI-27.

**Recommendation to the President, p.I-31.

***Ibid.

would also require more social services and would probably be associated with the highest unemployment."** Impacts associated with the Arctic system would be "much smaller" and the Commission states that Alcan impacts would fall somewhere in between. The FPC decision also notes the possibility that lower transportation costs associated with Arctic may produce greater royalty income to Alaska, but in its final assessment the Commission finds no compelling reason to choose one system over the others on the basis of socioeconomic impacts.

**Ibid, p. IV-27.

ISSUES DISCUSSED

Issues which have been identified by the Commission and interested parties include:

1. What will be the increase in population associated with each proposal? What will be the availability of housing in the affected communities for the additional population?

2. What are the public fiscal impacts of the various proposals, i.e., what are the effects on State and local revenues, and expenditures for public services and infrastructure? Will there be a strain on available public services and facilities?

3. How much additional employment will be provided by each proposal? What will be the effect on unemployment? Who will obtain any additional jobs: native residents, non-native Alaskans, or in-migrating job-seekers? What are the "long-term" employment possibilities associated with each proposal, as opposed to temporary construction employment?

4. What will be the effect of each proposal on personal and corporate income, on the price of goods and services?

5. What will be the effects of each proposal on native community lifestyles? What social problems might be expected to arise with the rapid growth or change of the rural villages?

6. Is the intrastate use of royalty gas in Alaska a factor in the consideration of the various proposals? If it is, how does this factor affect the evaluation of each proposal?

7. In terms of the distribution of benefits and costs among regions of the United States, and particularly between Alaska and the lower 48 States, where does the public interest lie? Is it in the public interest to subsidize the economic development of Alaska at the cost to lower 48 States of a higher delivered-gas price?

SUMMARIES OF POSITIONS AND EVIDENCE OF INTERESTED PARTIES

Applicants

1. Alaskan Arctic Gas Pipeline Company

In its extensive brief, Arctic maintains that its proposal is the most beneficial to the State of Alaska since it will provide large benefits and cause the least socioeconomic cost.* This assessment is based on the assertion that the major socioeconomic benefits from any pipeline project will be from severence taxes and royalties, and that such benefits are roughly equal for all three projects.**

Arctic further states that since its system has only a relatively short section in Alaska, and that section is in the much less accessible northern portion of the State, the impacts of the Arctic Gas System on public facilities and services will be much less than the impacts of the El Paso and Alcan systems. The magnitude of the population effects is smaller, fewer communities in the State of Alaska are affected, and prospective in-migration by out-of-state job seekers is discouraged by the inaccessibility and seasonal construction schedule of the North Slope.

Arctic responds to the contention that the other two proposals provide greater benefits to the Alaskan economy because of their greater lengths in Alaska by characterizing the severence tax and royalty revenues as primary in magnitude and as long-term benefits as opposed to short-term construction employment.***

Excerpts from the Arctic socioeconomic brief illustrate the contentions. "Compared to severence taxes and royalties, all other benefits to the state will be transitory and miniscule. (T)he importance of gas-related

*Brief of Arctic Gas Project on Socioeconomic Issues, p.2.

**Arctic points out that if the gas transportation costs are lowest with the Arctic system, as projected, and if wellhead prices are de-regulated, severence tax and royalty income to Alaska may actually be largest with the Arctic system.

***Dr. David Kresge, Tr. 33,709-33,710

employment is...negligible...* Other revenues, i.e., property tax and corporate income tax revenues, are said to be small; personal income tax revenues important only for the relatively short period of construction.

The Arctic Gas System is the only proposal which would not provide the possibility of delivering royalty gas for use in Southern Alaska. Arctic discounts any benefits claimed by the State of Alaska from industrial development induced by the intrastate availability of North Slope natural gas, alleging that the State has not been able to present any solid evidence either on the basis of past experience in Cook Inlet or firm expressions of industry interest that such industrial uses will occur. In addition, Arctic notes that possibility of an exchange agreement in which Cook Inlet gas could be provided in Southern Alaska in return for North Slope royalty gas.

Arctic cites estimates that in the case of the Alyeska construction as many as 56,000 in-migrants may have entered Alaska in 1975 alone, and that 35% of the adult in-migrants had no specific job waiting for them. These unemployed increased the public welfare burden in Alaska, and the entire growth in population caused a great increase in demand for public facilities and services. Arctic states that the large increase in demands for goods resulted in shortages and rapid price rises, and alleges that similar occurrences could be expected with the large impacts on the State of either the El Paso or Alcan route.

The following projections of peak construction - induced population increases in Alaska are mentioned by Arctic:**

	El Paso	Alcan	Arctic
FPC	24,100	-	3,000
DOI	33,300	33,400	4,800
State of Alaska	46,470	-	16,618
El Paso Alaska Co.	53,900	-	-
URSA (Arctic Consultant)	-	-	2,600

*Brief of Arctic Gas Project on Socioeconomic Issues, pp. 12-13.

**Arctic Brief, pp. 24-26.

The large size of the El Paso and Alcan impacts is emphasized. In addition, Arctic cites an estimate that 40% of the Alyeska construction workers sent their paychecks out of state, a statistic which would indicate that much of the increase in per capita income during the construction phase does not remain in the State.

Arctic criticizes the impact of El Paso on small Alaskan communities by citing the El Paso projection of the pipeline - impacted population of the Cordova-McCarthy census division:*

1977	-	2400
1979	-	9100
1982	-	4100

Once again Arctic emphasizes the strain on and costs of increased but transitory demand for public services and infrastructure.

Arctic claims that its extensive planning with the citizens of Kaktovik, the principal village impacted by the Arctic System, will "maximize benefits and avoid dislocation."** Alcan is criticized for not having yet acted on plans to carry out similar activities.

Finally, in Canada Arctic plans to locate hiring halls in larger southern metropolitan areas, thereby discouraging migration of unemployed workers to the more fragile and rural Yukon and Northwest Territories.

2. El Paso Alaska Company

After reviewing the methodology behind the projections made by various parties before the Commission, El Paso goes on to state that its projections and those of the FPC and the State of Alaska all agree that the socio-economic impacts from the El Paso proposal would be greater than the impacts from Alcan or Arctic. The key to El Paso's argument is its assertion that the greater impacts reflect greater benefits to the State of Alaska.

After illustrating how its proposal would provide the greatest impact in terms of population and absolute employment, El Paso also asserts that it would provide the greatest impact on aggregate personal income and in-state spending, citing the FPC FEIS projections.***

*Arctic Brief, p. 45.

**Ibid.

***El Paso Brief, pp. 9-10.

In regard to per capita personal income, the projections of the FPC in its FEIS show a drop after the first several years of construction and operation of the project.* El Paso's consultant on socioeconomic impacts alleges that this downturn can be explained as a lowering of the average as later growth in the economy increases employment in the trades and services industries, which are lower-paying.

El Paso asserts that the "revenues accruing to the state and local governments as a result of the project will exceed increased public service costs throughout the life of the project,"** and that the improvement in financial capacity will allow those governments to provide expanded services.

El Paso also cites benefits from the availability of gas to potential consumers along the Trans-Alaska route, and claims that the natural gas pipeline construction will provide employment for some of the Alyeska workers, thereby easing the severe unemployment following completion of the oil pipeline.

The endorsement of both the State of Alaska and the City of Cordova is claimed by the El Paso applicants. The State has expressed public support based on arguments quite similar to those used by El Paso. Among the benefits cited by the Alaska Commissioner of Revenue is his estimate of an additional $126 million in direct revenues to the State from the El Paso system as compared with the Arctic system.

El Paso cites statements by the City of Cordova, the City Manager and the president of the local Chamber of Commerce expressing support for the economic stimulus effects of the El Paso system. The statement by the City of Cordova indicates recognition of "significant and far-reaching effects on the economic, social and environmental well-being of the Cordova Community," but also expresses the belief that "the great majority" of these effects are "beneficial."***

The Cordova statement asserts that most elements of the community look forward to increased business from construction workers and "the stabilizing influence on the Cordova economy which the 300 permanent

*FPC, FEIS, p. I-C129.

**El Paso Initial Brief, p.15.

***El Paso Initial Brief, pp. 17-18.

highly-skilled jobs at the LNG plant will provide, as well as the potential tax base which its siting on Gravina Peninsula will afford." The city also offers the following evaluation, "El Paso's Trans-Alaska Gas Project is precisely the type of controlled development needed by the Cordova community, the State of Alaska and the entire United States."*

An attorney for Chugach Natives, Inc. and the Eyak Corporation claims support for the Gravina Point terminus for its contribution to diversifying the Cordova economy.**

El Paso's final point is that since impacts will be concentrated in Alaska and particularly at Cordova, the views of the respective governments and citizens should be "determinative of the question of benefit."***

In its reply brief El Paso criticizes Arctic's suggestion that its lower cost of transportation may provide higher revenues to the State of Alaska, noting that such an outcome is possible only if Congress were to de-regulate the wellhead price of Alaskan gas for intrastate sale.

El Paso also responds by disagreeing with Arctic on the importance of benefits other than royalty payments and severence taxes. Population, employment and income effects are emphasized as substantial benefits to the State of Alaska.

3. Alcan Pipeline Company

Alcan describes the general economic impact of their proposed system as increasing the growth rate of the State of Alaska and directing that growth toward regions affected by the pipeline route. As concluded by other parties in similar statements before the Commission, Alcan says its system "would have a significantly greater economic impact on Alaska than the Arctic Gas proposal, but a somewhat lesser impact than the El Paso proposal."****

*Ibid, p.18.

**Ibid, pp. 19-20.

***Ibid.

****Alcan Initial Brief, p. 4.

The following impacts are outlined in Alcan's socioeconomic brief:*

a. Addition to Gross State Product (GSP) peaks during the construction phase in 1980 at $210 million. GSP impact is concentrated in the Fairbanks and Interior regions during construction (which is completed in 1983) and later increments shift to the Anchorage region. This regional distribution of impacts over time holds true for all of the economic impacts discussed in the brief.

b. Additional employment peaks in 1980 at 20,278 and drops significantly immediately after completion of construction, rising gradually thereafter. Anchorage region employment is more stable than the Interior and Fairbanks region employment, which depends heavily on the construction sector.

   Real wages and salaries follow patterns similar to that of employment.

c. Population impact also peaks in 1980, at 28,692, with regional distribution similar to that of employment impacts.

d. Personal income peaks in 1980 and 1983. After 1983 the effect of the project is to lower real per capita income. The explanation for this effect is the same as for El Paso; later increments of employment are in lower-paying support services as compared with high-paying construction jobs.

e. Impact on state revenues peaks in 1984 and 1990,** ranging from $185 million to $346 million in 1984, dropping after construction and increasing thereafter to a range of $182 million to $387 million in 1990. Local revenues behave similarly, peaking in 1981, 1984, and 1990.

State revenues are largely composed of "petroleum sector taxes and charges" during construction and "direct taxes and royalties"

*Ibid., pp. 2-10. Quantitative results are from an application of the MAP model by the University of Alaska ISEGR to the Alcan system, construction assumed to begin in 1978, operation in 1981.

**1990 is the last year of the model simulation.

during operations, while increased local revenues are largely from property taxes and sales taxes.*

Alcan asserts that, "In the case of both state and local governments, expenditure impacts will tend to follow the same pattern as revenue impacts."**

Regarding negative impacts of their proposal, Alcan states that "the positive benefits to the local communities and people, as well as to the state as a whole, will far exceed any negative social impacts that may occur."*** The claim is made that the Alcan Project will ease the post-Alyeska transition, and that most of the communities to be affected by Alcan have already made some adjustments to accomodate larger-scale development through their Alyeska experience.

It is apparent from Alcan's brief, however, that there are a few native communities along the Alaska Highway portion of the route which certainly will be significantly affected, with a "lessening of cultural traditions" and the emigration of youth in search of high wages in pipeline employment. The most significantly-impacted communities are expected to be Dot Lake, Tanacross, Tetlin and Northway.****

Benefits predicted by Alcan for native communities include additional employment, job training and the "awarding of construction-related contracts to native claims act corporations and other native-owned firms."*****

Finally, in Canada Alcan says benefits will be of similar nature as those in Alaska, and socioeconomic costs are minor, in part because of the use of the established Alaska Highway corridor. Regarding native claims, Alcan expresses optimism for settlement in the Yukon while expressing severe doubts about Arctic's ability to surmount native claims disputes in the Mackenzie

*Alcan Initial Brief, p. 9.

**Ibid.

***Ibid., p. 11.

****Ibid., pp. 14-15.

*****Ibid., p. 15.

Valley.*

In its Reply Brief Alcan attacks the arguments of Arctic, asserting that 1) the benefits other than severence taxes or royalties, such as employment, personal income, other government revenues and development of the economy, are undervalued by Arctic, and 2) the transportation cost of the Alcan system is lower than Arctic and consequently, if there is any difference, royalties would be higher with the Alcan system.

State of Alaska

Alaska expresses its strong desire and need to develop a stable, diverse economy and "social environment," in contrast with the boom-bust cycles of previous extractive industries. The State suggests that the Commission should use as a criterion for judging the natural gas systems the "lasting contribution to Alaska's healthy growth each would make."** The Alaskan Statehood Act is even cited as containing Congressional intent to promote the independence and growth of the State economy.

The State also emphasizes repeatedly the necessity of having royalty gas for use within Alaska to promote industrial development.

Overall the State of Alaska favors a trans-Alaska route, and in particular the El Paso proposal, believing that the greater economic impacts will expand the economy to a more viable size and provide much greater revenues for expenditure on public facilities and services.

*Ibid., p. 18.

**State of Alaska Initial Brief, p. 3.

OTHER MAJOR RELEVANT REPORTS

Interior Department FEIS (March 1976)

In Alaska the Interior Final Environmental Impact Statement predicts beneficial effects on unemployment, but that assessment was based on the assumption that preparatory construction work would begin in 1976.

The FEIS also indicates the likelihood of "major and significant adverse impacts" from the Arctic system on the wildlife on which the native subsistence lifestyle is based. As a result the loss of traditional culture is accelerated.*

In Canada the economic impact of Arctic would be largely limited to a few communities (Inuvik, Norman Wells and Fort Simpson), according to the FEIS. Employment of local labor would be over 2,000 at peak construction but perhaps only 200 in operation.**

With regard to the native claims issue, the Interior FEIS states:***

> One of the constraints in the Canadian Government guidelines for northern pipelines (Department of Indian Affairs and Northern Development, 1972) is that: "Any certificate issued will be strictly conditioned in respect of ... the protection of the rights of northern residents, ... " Furthermore, the stated government policy is that any decisions made concerning northern pipelines will be without prejudice to Indian land claims and treaty rights.
>
> The extent to which land claim settlements and other legal prerogatives of local residents may determine the granting of the proposed pipeline construction permit is not clear. The attitude of the local residents, as interpreted from limited and subjective surveys, seems to range from full acceptance to complete rejection of the proposed pipeline project.

*DOI FEIS (Alaska Volume), p. 293.

**DOI FEIS (Canada Volume), p. 473.

***Ibid., p. 486.

Berger Inquiry -- Canada (May 9, 1977 Report)

On May 9, 1977 the Report of Justice Thomas R. Berger on the Mackenzie Valley Pipeline Inquiry was released to the public. The report is an advisory document for the Minister of Indian and Northern Affairs on the social, economic and environmental impacts of a natural gas pipeline through the northern Yukon and Mackenzie Valley.

The major recommendations of the report are that 1) no pipeline should be constructed through the northern Yukon because of environmental impacts, and 2) any Mackenzie Valley pipeline should be postponed for at least ten years to allow for settlement of native claims. In addition, Judge Berger expresses his opinion that the evidence before the Inquiry indicates that the Alcan route may be satisfactory from an environmental viewpoint.

The report discusses the testimony of one thousand witnesses at thirty-five community hearings in the Yukon and Northwest Territories. Judge Berger explains the heavy dependence of native culture on the subsistence lifestyle, on unrestricted use of land for hunting, fishing and trapping, on sharing and strong community identity.

Quoting from the Report,*

> The native people insist that the settlement of native claims should be a beginning rather than an end of the recognition of native rights and native aspirations. In my opinion, a period of ten years will be required in the Mackenzie Valley and Western Arctic to settle native claims and to establish the new institutions and new programs that a settlement will entail. No pipeline should be built until these things have been achieved.
>
> It would therefore be dishonest to try to impose an immediate settlement that we know now -- and that the native people will know before the ink is dry -- will not achieve their goals. They will soon realize -- just as the native people on the prairies realized a century ago -- that the actual course of events on the ground will deny the promises that appear on

paper. The advance of the industrial system would determine the course of events, no matter what Parliament, the courts, this Inquiry or anyone else may say.

*Berger Inquiry Report, pp. xxiv-xxv.

Another recent report of interest is the study of effects on the national economy, Employment Impact of the Alternative Proposals for the Alaska Natural Gas Pipeline by the Federal Energy Administration.

CONCEPTUAL AND SUBSTANTIVE DEFICIENCIES IN PRIOR ANALYSES

There are several general concepts or major issues which have not been adequately addressed in most prior analyses and arguments presented before the Commission. These include:

1. Gross "Benefits" from Employment vs. Net Socioeconomic Impacts - In the briefs of the State of Alaska and El Paso especially, the socioeconomic impact assessments fail to account for or give sufficient weight to the costs of an expanded population in terms of cost of public services, and capital and operating costs of public facilities. In addition, the question of whether Alaskan or in-migrants fill new pipeline - related jobs is crucial to the accurate measure of net benefits from increased employment.

2. Aggregate System Impact vs. Maximum Local Impacts - Emphasis in some of the briefs tends to be on a comparison of the total impacts of each of the three systems. It is important to give due weight to examining the impacts on individual communities, particularly native villages. In addition, the distribution problem created when the taxable property of a project is located in one community, but the public services and facilities are needed in another needs to be examined more thoroughly for each of the proposed routes.

3. One problem concerns the tendency to view the <u>degree</u> of change (in population, for example) as the sole relevant measure of socioeconomic impact on a community. Consideration of the <u>rate</u> of change might be an important factor in assessing the severity of the impacts from each of the proposals, but little attention is given to this possibility. This point is particularly relevant to the native communities. It is often said that the native economy will undergo a transformation from a subsistence basis to a wage basis regardless of whether a pipeline is constructed. It is nevertheless important to assess the rate of change as a determinant of the magnitude of impacts.

4. Social and Cultural Problems, Native Claims - The briefs filed before the FPC generally focused on the narrower implications of the pipeline systems for state and local economies. The effects of any pipeline system on social and cultural concern such as alcoholism, and the tendency toward cultural breakdown in impacted native villages has not been discussed in enough detail. The entire issue of the desires of native communities and native claims has been given a cursory treatment in several socioeconomic impact discussions.

ANALYSIS

The following discussions are intended to facilitate the evaluation of the Alaska Natural Gas Transportation Systems.

1. Each of the three proposed systems will create a large amount of additional employment during construction and a generally small amount following completion of construction. Since it is unlikely that construction on a natural gas system would start soon enough to capture a large portion of the workers laid off from the Alyeska construction, a large construction workforce would tend to continue the disequilibrium characteristic of the Alaskan economy.* Since it has a much smaller construction workforce than the El Paso and Alcan systems, the Arctic Gas System would have less of the effect of perpetuating large unemployment than would the other two systems. El Paso has the largest long-term operation employment in Alaska with its LNG terminal, but even that number is relatively small (300 at the terminal). Many of the unemployed from Alyeska were originally in-migrants who may be encouraged to extend their stay in Alaska in hopes of obtaining a construction job if either the El Paso or Alcan route is certificated. In addition, more Alaskan residents and natives will be attracted into the high-wage construction market, leaving behind lower-income but more stable, longer-term livelihoods. Unemployment following the completion of either of the two longer routes is likely to be very high. The development of enough new industry in southern Alaska to absorb the unemployed is highly speculative at this time.

2. It is generally considered in the best interests of the State of Alaska to establish a stable economy, less dependent on the large and transitory disruptions of the extractive industries, particularly oil and gas development. This transformation of the economy can be attained by reducing reliance on large construction projects, diversifying the commercial and industrial base and strengthening long-term employment opportunities. The State of Alaska proposes to accomplish this transformation with a Trans-Alaska natural gas pipeline, thereby encouraging rapid development of infrastructure to support enlarged economic activity and making gas available for new industrial uses. This strategy will work if businesses indeed are willing to make major investment in southern Alaska. If successful the State will have rapid development, but in the interim will incur major socioeconomic dislocations. The El Paso proposals would probably provide the greatest stimulus to the Alaskan economy, with lesser effects attributable to Alcan and the smallest impact by the Arctic system. Combined with the massive revenues from North Slope oil production, however, any of the systems would provide Alaska with sufficient amounts of funds to greatly expand services.

*The Anchorage Times of May 28, 1977 reports a rise in the state unemployment rate from 14.1 to 15.5 percent during April, attributed by State Labor Department economists to Alyeska lay-offs. Another state economist is quoted as expecting 12,000 additional lay-offs (7.5% of total state workforce) with the completion of construction.

The question of whether the availability of North Slope natural gas is an important ingredient in the diversification of the Alaskan economy is unsettled for at least two reasons. There is the possibility that exchange agreements could provide Southern Alaska with Cook Inlet natural gas in trade for the state's royalty gas from the North Slope, eliminating the need for a Trans-Alaska pipeline to provide gas for industrial uses within the state. It is not clear, however, whether there are enough natural gas reserves in the Cook Inlet area to provide significant amounts of gas to the state over the next couple of decades.

Secondly, the potential for industrial development based on the use of natural gas is uncertain. There is only a limited amount of experience from the relatively modest petrochemical development around Cook Inlet as a guide to industry interest in Alaskan gas.

Summarizing, with regard to the royalty gas question El Paso and Alcan may have an advantage, but the magnitude of any such advantage is open to wide debate.

3. In his initial decision, FPC Administrative Law Judge Nathum Litt raised the issue of inter-regional distribution of benefits. Specifically Judge Litt addressed the question of whether it was appropriate for the Commission to consider the benefits of induced economic development for the State of Alaska in its decision on certification. Litt observed that since the transportation cost for gas delivered via the El Paso route would be substantially higher than that of alternative routes, a decision which gave positive weight to the induced development benefits implied a policy of subsidizing Alaskan economic development by forcing the lower 48 States to pay a higher delivered price for North Slope gas. Litt concluded on the basis of legal precedent that such a consideration was an inappropriate basis for a Commission decision. The President, however, has the option of including regional economic benefits in his deliberation.

4. The net revenue benefit of each of the proposals to the State of Alaska and local communities is rarely estimated in the evidence, particularly that presented by the applicants or the state. Since Alaska is largely undeveloped, even relatively small increases in population can put a severe strain on local public services and facilities. A population increase of over 30,000 in the entire state due to the El Paso or Alcan system implies very substantial public expenditures despite the fact that much of the route for those pipelines would be identical to that of Alyeska. Based on induced population and revenue projections, it appears that the net revenues

from the three systems over the construction period might be comparable; much larger revenues associated with a trans-Alaska route such as El Paso being offset to a substantial degree by much larger public expenditures for expanded facilities and services to support in-migrants.

Of course the longer systems would also provide larger net revenues in later years of operation, after infrastructure adjustments had been made to accomodate the expanded population.*

The preceding net revenue analysis is based on public revenues and expenditures for state, regional and local governments combined. In regard to impacts on local government fiscal conditions alone, the selective and timely provision of financial assistance by the State of Alaska, regional corporations or pipeline firms will be critical in avoiding the imposition of severe hardships on rural communities along any pipeline route.

Communities impacted by Alyeska may be able to absorb the impacts of a natural gas pipeline without severe difficulty. Along the El Paso and Alcan routes cities such as Fairbanks and Delta Junction would utilize their already enlarged capacity of public facilities and services.

Other less developed communities, e.g., Kaktovik along the Arctic route, Dot Lake, Tanacross, Tetlin and Northway along the Alcan route, and Cordova along the El Paso route, will face major challenges to accomodate the effects of nearby construction activity. Those communities which experience a pipeline-induced increase in population may face the following two fiscal problems: 1) the need for increased public expenditures arises immediately, but any property tax revenues do not materialize until later years, and 2) a community that bears the burden of public expenditures may not have taxing powers over the lands through which the pipeline passes. The most

*FPC FEIS, pp. I-C144-148.
Arctic Initial Brief, pp. 24-26.
Gladstone Associates report for Office of Coastal Zone Management, NOAA, U.S. Department of Commerce, 2nd Technical Memorandum: Per Capita Standardized Unit Costs, Current Cost Multipliers and Local Area Multipliers, pp. 1-7, 1-13.

dramatic example of these problems would be at Cordova if the El Paso system were constructed. Major population impacts (a four-fold increase in two years, according to El Paso projections) and additional public expenditures associated with the LNG terminal construction would center on Cordova, but property tax revenues would be based at Gravina Point. The state may wish to arrange for a transfer of revenues to resolve the jurisdictional problem and a loan arrangement to resolve the timing ("front-end financing") problem.*

5. In a number of socioeconomic analyses it is stated that the transformation of small communities, particularly native villages, from a subsistence economy to a predominantly wage-based economy will likely occur even if a pipeline is not constructed. Construction of a pipeline will increase the rate at which this transformation takes place.

   Such statements, made without further qualification, fail to note the likelihood that rapid development will encourage severe social problems such as crime, family disintegration and alcoholism. Experience with industrial development in Alaska and Northwestern Canada has shown that these tendencies are present to an especially alarming degree when native populations, strongly dependent on cultural ties for personal identity and economic survival, are exposed to the radically different "modern" lifestyle. Native lifestyles, dependent on land which is unrestricted by ownership rights, are incompatible with the foot-loose and money-oriented lifestyles of pipeline construction workers.**

   The most sensitive native settlements which could be affected by a natural gas pipeline are probably those in the isolated northern Yukon and Mackenzie Delta along the Arctic route. Native communities along the Alaskan Highway (which is followed by Alcan) have already been exposed to development forces, and pipeline impacts would be less traumatic. Nevertheless, the certification of any pipeline would accelerate the weakening of the native lifestyle and the spreading of social problems.

*For facilities supporting energy activities which are coastal-dependent there is currently a Federal assistance program (specifically the Coastal Energy Impact Program administered by the Office of Coastal Zone Management of the National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce) to provide loans and bond guarantees to aid communities with the front-end financing problem.

**Northern Frontier, Northern Homeland: The Report of the Mackenzie Valley Pipeline Inquiry by Justice Thomas Berger contains an illuminating and detailed, if not entirely objective description of social, cultural, economic, and political problems concerning native communities in Canada.

6. Of all the socioeconomic considerations, the most significant factor in a choice among the alternative pipeline proposals may be the Canadian native claims issue. The issue of native claims in the Mackenzie Valley and control over land uses in the region is highly charged, and settlement, viewed by many to be a prerequisite for any development, is not considered likely in the near future.

   Justice Berger, in his Report of the Mackenzie Valley Pipeline Inquiry, expresses the firm belief that:

   > ...the native people must be allowed a choice about their own future. If the pipeline is approved before a settlement of claims takes place, the future of the North -- and the place of the native people of the North -- will, in effect, have been decided for them.*

   The apparently poor chances of early settlement, combined with the vehement insistence of native groups and the Berger Inquiry that any pipeline through the Mackenzie Valley be delayed until the settlement of native claims, could pose a barrier to early construction of a Trans-Canadian pipeline, especially the Arctic system.

*Berger Inquiry Report, p. xxiv.

CONCLUSION

The major conclusions are:

- The decision of the Government of Canada, currently expected to be announced before the deadline for the final U.S. decision, could rule out either the Arctic or Alcan route because of the adverse effects on the cultural stability of native communities and the resulting social problems.

- The El Paso system provides a somewhat greater opportunity for intrastate use of royalty gas than does the Alcan system because of the possibility of coastal industrial development with El Paso. Such additional development could provide beneficial employment and income effects.

- In general both the economic development and dislocation impacts in Alaska would be greatest with the El Paso system, smallest with the Arctic system, and would fall in-between with the Alcan system.

- Although the public revenue impacts of the three alternative systems would be greatest from El Paso, next largest from Alcan, and least from the Arctic proposal, the public expenditures required to serve the induced population growth also would be in that order. As a result, net revenue benefits during the construction period in particular may be much less than some previous analyses have implied.

- The El Paso system would concentrate severe disruptive impacts on the City of Cordova, whereas the Alcan system would create significant but much smaller impacts on several native villages along the Alaska Highway.

- Since there may be instances (e.g., Cordova) in which local government revenues of impacted rural communities may not cover public expenditures, the selective and timely provision of financial assistance by the State government, regional corporations or pipeline firms may be helpful in avoiding severe hardships.

In summary, the significance of socioeconomic impacts for the overall route decision depends on the weight given to impacts disruptive of social and cultural structure as opposed to economic development considerations. If factors such as adverse effects on native communities and local lifestyles are given primary importance, the Arctic and El Paso routes would tend to suffer in a comparison with Alcan. If more importance is placed on a route which will stimulate the Alaskan economy, the El Paso route clearly has the advantage, followed by Alcan.

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